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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,134	10/01/2003	James H. Holt JR.	284-30699-US	6405
24923	7590	07/05/2006	EXAMINER	
PAUL S MADAN MADAN, MOSSMAN & SRIRAM, PC 2603 AUGUSTA, SUITE 700 HOUSTON, TX 77057-1130			COY, NICOLE A	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/676,134	<b>Applicant(s)</b> HOLT ET AL.	
	<b>Examiner</b> Nicole Coy	<b>Art Unit</b> 3672	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-12 and 15-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-7,9,11,12,15-33 is/are rejected.
- 7) ☒ Claim(s) 8 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 30 is objected to because of the following informalities: There is no antecedent basis for "said plug" in claim 30. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 5-7, 15-19, 22-27, and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomason et al. (USP 4,201,265).

With respect to claim 5, Thomason et al. discloses a side pocket mandrel comprising: a. an axially elongated tube having an enlarged diameter section (see figure 1); b. an inner volume formed in said enlarged diameter section (see figure 1, wherein the inner volume is the volume defined by 20 and 16); c. a filler material positioned in said inner volume, said filler material preventing cement from occupying a substantial volume within said inner volume while also allowing placement of a valve element (see figure 4 and 5, numerals 52 and 54).

With respect to claim 6, Thomason et al. discloses that the filler material comprises surface discontinuities formed to induce fluid flow turbulence (see figure 4

numerals 74 and 76), wherein the surface discontinuity would inherently induce fluid flow turbulence.

With respect to claim 7, Thomason et al. discloses that the surface discontinuities comprise surface upsets (see figure 5 numerals 74 and 76).

With respect to claim 15, Thomason et al. discloses that the filler material comprises a plurality of guide sections 52, 54).

With respect to claim 16, Thomason et al. discloses a cylinder bore enclosure (20) positioned in said inner volume.

With respect to claim 17, Thomason et al. discloses that at least one of the guide sections (52,54) are positioned axially below said cylinder bore enclosure (20).

With respect to claim 18, Thomason discloses an apparatus for insertion into a tubing string disposed in a wellbore, comprising: (a) a tubular body (12) having an enlarged diameter section (see figure 1), the enlarged diameter section generating turbulent flow when a working fluid flows therethrough (wherein the enlarged diameter section would inherently generate turbulent flow).

With respect to claim 19, the turbulent flow would inherently flush residual cement out of said enlarged diameter section.

With respect to claim 22, Thomason et al. discloses comprising a valve housing (16) formed within said enlarged diameter section (see figure 1).

With respect to claim 23, Thomason et al. discloses that the enlarged diameter section includes a channel for insertion of a valve element into said valve housing (16) (see column 2 lines 43-48).

With respect to claim 24, Thomason et al. discloses that the enlarged diameter section (see figure 1) has an interior volume that includes a surface discontinuity (74, 76) that induces the fluid flow turbulence (wherein turbulence would inherently be induced by the surface discontinuity).

With respect to claims 25 and 33, Thomason discloses that the surface discontinuity includes one of (i) surface upsets, and (ii) indentations (see figure 4).

With respect to claim 26, Thomason discloses that the surface discontinuity (74, 76) is formed in a filler (52, 54) positioned in said enlarged diameter section (see figure 1).

With respect to claim 27, Thomason et al. discloses a production string producing a fluid from a wellbore drilled in a subterranean formation, comprising: (a) a production tube (see abstract, wherein the disclosed mandrel is used in a tubing) adapted to be at least partially cemented in the wellbore (wherein said tubing is adapted to be cemented); and (b) at least one mandrel (12) positioned along said production tubing, the mandrel having an enlarged diameter section (see figure 1) generating turbulent flow when a working fluid flows therethrough (wherein the enlarged diameter section would inherently generate turbulent flow).

With respect to claim 30, Thomason et al. discloses a guide (52, 54) positioned in said mandrel, said guide keeping said plug with a primary flow bore axis of said mandrel (wherein the guide would inherently keep a plug with a primary flow bore axis).

With respect to claim 31, Thomason et al. discloses that the enlarged diameter section includes a channel for insertion of a valve element into said valve housing (16).

With respect to claim 32, Thomason et al. discloses that the enlarged diameter section has an interior volume that includes a surface discontinuity (74, 76) that induces the fluid flow turbulence (wherein the surface discontinuity inherently induces the fluid flow turbulence).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 11, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Thomason et al.

With respect to claim 9, Thomason et al. discloses that said filler material comprises a plurality of independent increments (see figure 4, wherein 52 and 54 are independent increments).

In the alternative, if applicant means to claim that there are multiple filler guides on each side of the cylinder, it would have been obvious to modify Thomason et al. to comprise a plurality of independent increments in order to fill the recess and prevent the wireline of well tools from catching between the inside of the body and the rails (see column 1 lines 30-42).

Moreover, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a plurality of independent increments, since it

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has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With respect to claim 11, Thomason et al. discloses that each of said independent increments of filler material is welded to a tube wall enclosing said inner volume (see column 3 lines 9-10).

With respect to claim 12, Thomason et al. discloses that the filler material is aligned in substantially parallel rows on opposite sides of said workspace channel (see figure 4).

### ***Claim Rejections - 35 USC § 103***

6. Claims 20, 21, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomason.

With respect to claim 20, the reference is capable of cooperating with a plug pushed by the working fluid to displace cement out of the enlarged diameter section. It would have been obvious to modify Thomason to include a plug during cementing and the plug would have been pushed by working fluid.

With respect to claim 21, it is well known with the art to include a mass objected in order to guide a plug.

With respect to claim 28, Thomason et al. discloses that the at least one mandrel includes an upper and a lower assembly joint each having a diameter smaller than a diameter of the enlarged diameter section (see figure 1). Thomason et al. does not disclose that said upper and lower assembly joints separated by a length selected to

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maintain a pressure on a plug traveling through said mandrel. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to separate the joints by a length to maintain a pressure on a plug, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involved only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claim 29, Thomason et al. discloses a guide (52, 54) positioned in said mandrel, said guide keeping said plug with a primary flow bore axis of said mandrel (wherein the guide is capable of keeping the plug with a primary flow bore axis).

#### ***Allowable Subject Matter***

7. Claims 8 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

8. Applicant's amendments to the drawings, filed 4/21/06, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings has been withdrawn.

With respect to claim 5, Applicant argues that the feature 52 and 54 are described as rails for forming a guide path. However, it is irrelevant as to what they are described as, as they form the function of filler material as recited in claim 5. Applicant



also argues that the area identified by the lead line 24 is largely open and would be filled by any cement flowing through the mandrel 12. However, the claims only recite an inner volume, and do not define such a volume. Thus, if the inner volume was the volume occupied by 16 and 20 in Thomason, then the filler material does prevent cement from occupying a substantial volume.

With respect to claim 6, the Applicant argues that Thomason does not disclose a mandrel that has features that induce turbulent flow. However, Thomason discloses a mandrel similar to that of Applicant mandrel. Thus, the turbulent flow would be inherent. The applicant also argues that a surface discontinuity does not inherently induce fluid flow turbulence. However, the Applicant's claims and specification indicate otherwise. The specification, on page 6 line 28 to page 7 line 2, states that the well working fluid behind the wiper plug 50 flows through each mandrel of the present invention, the working flow behind the traveling wiper plug induces turbulent velocities and flow patterns within a mandrel to scrub and flush each mandrel free of residual cement. On page 8 lines 3-5, the specification states: of equal and less obvious importance is the filler guide section function of generating turbulent circulations within the mandrel voids by the working fluids flow behind the wiper plug. Thus, as Thomason discloses a filler material with surface discontinuities, the fluid in Thomason would be turbulent flow.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 7:30-5:00, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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